

US EPA RECORDS CENTER REGION 5



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Monthly Oversight Report 39  
ACS NPL Site  
Griffith, Indiana  
February 28, 2004 - March 26, 2004

**Monthly Oversight Summary Report No. 39**  
**ACS Superfund Site WA57, 46526.238**

**Reporting Period:** Month of March (February 28, 2004 - March 26, 2004).

**BVSPC O/S Dates:** March 1, 4, 8, 11, 16, 19, and 25, 2004.

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	6	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Ryan Construction	3	General Contractor
Central Crane	1	Crane Contractor
Global Technologies	2	Thermal Oxidizer Contractor
Vidimos	2	Specialty Metal Fabricator
Independent Environmental Services	2	Specialty Contractor
Austgen	1	General Contractor
Eagle Services	1	Specialty Contractor
PSA Environmental	2	Drilling Contractor

**Construction Activities**

**Major Activities:**

- Montgomery Watson Harza, Ryan Construction, and Central Crane removed the heat exchanger from the Durr thermal oxidizer unit 1 for inspection.
- Global Technologies and Vidimos inspected the damage sustained by the Durr thermal oxidizer unit 1 heat exchanger.
- Independent Environmental Services installed a temporary electric pump in the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system wells to increase dewatering.
- Independent Environmental Services removed water from the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system yard piping by pressurizing the lines with air, blowing water from the blower shed header system back to the wells.
- Montgomery Watson Harza resumed operating the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system and continued to operate the Off-

- Site Containment Area in-situ soil vapor extraction system, processing vapors through the Global thermal oxidizer unit 2.
- Eagle Services evaluated cleaning the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system well screens.
- Ryan Construction installed piping in the groundwater treatment plant to supply city water to the system.
- Austgen assisted Montgomery Watson Harza with miscellaneous maintenance activities in the groundwater treatment plant.
- Montgomery Watson Harza shut down the Global thermal oxidizer unit 2 on March 10 and 24, 2004, for maintenance.
- Montgomery Watson Harza performed the baseline sampling for the chemical oxidation treatability study in the south area near Colfax and Reder Roads.
- Montgomery Watson Harza performed the semiannual groundwater sampling event from March 15 to 23, 2004.
- Montgomery Watson Harza held biweekly construction coordination meetings at the site on March 11 and 25, 2004.

#### **Activities Performed:**

Montgomery Watson Harza (MWH), Ryan Construction, and Central Crane removed the heat exchanger from the Durr thermal oxidizer unit 1 on Monday, March 1, 2004. Ryan Construction installed wooden supports for the oxidizer chamber and successfully aided in relocating the heat exchanger unit onto a trailer. During the crane lift, Black & Veatch Special Projects Corp. (BVSPC) observed the crane operator talking on his cellular phone. BVSPC brought this action to Lee Orosz's attention immediately. Lee Orosz requested that the crane operator not answer his phone during the crane lift.

Two representatives from Global Technologies (Global) were onsite on March 4, 2004, to inspect the damage sustained by the Durr thermal oxidizer unit 1. The Global representatives reported that they believed the oxidizer chamber was in good shape and that the shell and tube portion of the heat exchanger may be salvageable. Vidimos also inspected the heat exchanger on March 22, 2004. Vidimos transported the heat exchanger offsite to its workshop to further estimate the repairs to the unit. MWH reported that it continues to evaluate the heat exchanger.

Independent Environmental Services (IES) was onsite on March 4, 2004, preparing to install an electric pump in the On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system wells in order to increase dewatering efforts in the ONCA. MWH reported that the electric pump will be placed in either a vapor extraction or a dual phase extraction (DPE) well and operated to perform localized dewatering. MWH reported recording the total gallons pumped from the wells and started dewatering on the west portion of the ONCA where primarily water is located. MWH reported that its water level measurements indicate that a significant amount of product is located on the eastern portion of the SBPA. IES installed the pump in ONCA SBPA ISVE system well SVE-46. IES connected the discharge piping from the pump to the pitless adapter in dual phase extraction (DPE) well SVE-50. IES removed the existing pump from SVE-50 and wrapped it in plastic prior to connecting the discharge piping. IES performed air monitoring in the breathing zone with a photoionization detector (PID) during the activities at the wells. IES reported that it observed elevated PID readings at the well head;

however, the PID readings in the breathing zone were 0 ppm. IES voluntarily wore half face respirators during the pump removal and installation process. The pump is powered by a temporary power line connected to the power supply in the blower shed.

MWH measured the water levels in the ONCA SBPA ISVE wells and observed that the majority of the wells located on the western portion of the cover were dry. MWH proceeded to operate the ISVE system, attempting to pull vapors from the dry wells. When the system began operating, MWH observed a water column in the piping for most of the dry wells except for five. MWH shut down the system and measured the water levels in some of the wells that contained water at the blower shed. MWH observed that these wells were still dry and believes that the water is present in the yard piping between the well and the blower shed.

IES removed water from the ONCA SBPA ISVE system yard piping on March 15 and 16, 2004. IES used pressurized air to blow the water in the yard piping lines from the header system in the blower shed back to the ISVE wells. IES reported that it observed material resembling grout and sand removed from the yard piping to well SVE-86. IES reported that most of the lines contained water and/or product; however, a few wells had more solid material in the lines. IES also reported that the liquid levels in the wells located in the roadway were high. IES removed the liquid from the wells using the temporary electric pump. MWH reported that it will continue to dewater specific wells in the ONCA SBPA ISVE system using the temporary electric pump as necessary.

MWH continued operating the Off-Site Containment Area (OFCA) ISVE system and began operating the ONCA SBPA ISVE system, processing vapors through the Global thermal oxidizer unit 2. MWH reported that it has 26 wells on-line in the ONCA SBPA ISVE system; however, it has not observed significant flow from several of these wells. MWH reported that Eagle Services was onsite on March 24, 2004, in order to evaluate cleaning the well screens for the ONCA SBPA ISVE system wells that are not producing flow. MWH reported that Eagle Services will be onsite on March 29, 2004, to jet clean the wells screens and vacuum the liquids for the wells.

MWH reported that it shut down the Global thermal oxidizer unit 2 on March 10, 2004, because of a leaking pipe and high pH in the scrubber water. MWH also shut down the groundwater treatment plant (GWTP) because the Global thermal oxidizer unit 2 processes the vapors from the aeration/equalization tank T-102. MWH and Austgen repaired the leaking pipe on March 11, 2004. MWH reported that the caustic pump for the unit was clogged and reconfigured the piping in order for the caustic pump from the Durr thermal oxidizer unit 1 to supply caustic to the Global thermal oxidizer unit 2. MWH resumed operating the Global thermal oxidizer unit 2 on March 11, 2004, processing vapors from the aeration/equalization tank and manually controlling the caustic addition to the unit. MWH did not operate the OFCA ISVE system on March 11, 2004, because it did not have programming control over the Durr caustic pump. MWH disassembled the Global thermal oxidizer unit 2 caustic pump on March 12, 2004, and cleared the obstruction. MWH reconnected the appropriate caustic pump to the unit and resumed processing the OFCA ISVE vapors. MWH reported that the GWTP and the Global thermal oxidizer unit 2 were shut down for approximately 4 hours on March 24, 2004, for routine maintenance.



MWH reported that Ryan Construction installed a connection to the exterior fire hydrant to supply city water to the GWTP on March 17, 2004. MWH began filling tank T-1 with city water because the nanofiltration unit was not operating properly and T-1 was not filling properly. MWH acid washed the nanofiltration unit filters on March 18, 2004, to clean the filters. MWH reported that after it washed the filter, the unit was operating properly and tank T-1 was being filled properly. MWH resumed operating the GWTP at 25 gpm.

MWH conducted the baseline sampling for its chemical oxidation treatability study in the south area near Colfax and Reder Roads. MWH collected soil samples from the impacted smear zone for analysis by ISOTEC to determine the appropriate concentration of modified Fenton's Reagent that should be applied to the treatment area. MWH also collected several soil and groundwater samples from the perimeter of the proposed treatment area to further delineate the north and east boundaries of the smear zone. Based on its field observations, MWH believes that the smear zone extends further to the north and east than originally thought. MWH reported that it will evaluate its proposed treatment area to determine whether it should be extended or adjusted to incorporate these additional areas.

MWH performed its semiannual groundwater sampling event from March 15 to 23, 2004. MWH measured the water levels on March 15, 2004, and began sampling the monitoring wells. MWH sampled 33 monitoring wells for indicator volatile organic compounds. MWH also reported that select wells were sampled for bis(2-chloroethyl)ether, an indicator semi-volatile organic compound, and metals. MWH also reported that it observed high turbidity and particulates in several of the monitoring wells. MWH redeveloped some of the wells during the groundwater sampling activities. MWH reported that it will recommend development for additional wells prior to the September sampling event.

MWH held two biweekly construction coordination meetings at the site on March 11 and 25, 2004.

Attached are BVSPC weekly reports No. 157 through 160, correspondence, log book notes, and photographs of the daily activities. BVSPC's crew conducted oversight of the major field activities on March 1, 4, 8, 11, 16, 19, and 25, 2004. BVSPC's crew attended two construction coordination meetings at the site on March 11 and 25, 2004.

**Topics of Concern:**

- None to report.

**Concern Resolution:**

- None to report.

**Upcoming Activities:**

- Eagle Services to clean the ONCA SBPA ISVE system well screens.
- MWH to remove and clean the pumps in the ONCA SBPA ISVE system dual phase extraction wells.
- MWH to line the Durr thermal oxidizer unit 1 scrubber to prevent corrosion.
- MWH to establish flow and test the ONCA SBPA ISVE system wells.
- MWH to continue operating the OFCA ISVE and the ONCA SBPA ISVE systems.

- MWH to chip the logs on the OFCA cover for placement in the wetland paths to monitoring wells.
- MWH to investigate benzene levels in the lower aquifer in the wetlands area.

Signature: Leigh Peters

Date: April 6, 2004

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**Weekly Oversight Summary Report No. 157**  
**ACS Superfund Site WA57, 46526.238**

**Reporting Period:** Week of March 1, 2004.

**BVSPC O/S Dates:** March 1 and 4, 2004 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	2	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Ryan Construction	3	General Contractor
Central Crane	1	Crane Contractor
Global Technologies	2	Thermal Oxidizer Contractor
Independent Environmental Services	2	Specialty Contractor

**Construction Activities**

**Major Activities:**

- Montgomery Watson Harza, Ryan Construction, and Central Crane removed the heat exchanger from the Durr thermal oxidizer unit 1 in order to assess the damage sustained by the unit.
- Global Technologies inspected the damage to the Durr thermal oxidizer unit 1 heat exchanger.
- Independent Environmental Services began preparations to install a temporary electric pump in On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system wells in order to increase dewatering efforts in the area.

**Activities Performed:**

Montgomery Watson Harza (MWH), Ryan Construction, and Central Crane removed the heat exchanger from the Durr thermal oxidizer unit 1 on Monday, March 1, 2004. Ryan Construction installed wooden supports for the oxidizer chamber and successfully aided in relocating the heat exchanger unit onto a trailer. During the crane lift, Black & Veatch Special Projects Corp. (BVSPC) observed the crane operator talking on his cellular phone. BVSPC brought this action to Lee Orosz's attention immediately. Lee Orosz requested that the crane operator not answer his phone during the crane lift. Two representatives from Global Technologies (Global) were onsite on March 4, 2004, to inspect the damage sustained by the Durr thermal oxidizer unit 1. The Global representatives reported that they believed the oxidizer chamber was in good shape and that the shell and tube portion of the heat exchanger may be salvageable. MWH

reported that it is waiting for an estimate from Global to determine whether to repair the heat exchanger to look for a new heat exchanger from an outside vendor.

Independent Environmental Services (IES) was onsite on March 4, 2004, preparing to install an electric pump in the On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system wells in order to increase dewatering efforts in the ONCA. MWH reported that the electric pump will be placed in either a vapor extraction or a dual phase extraction (DPE) well and operated to perform localized dewatering. MWH also reported that the discharge piping will be connected to the pitless adapter in a DPE well. MWH reported that it will record the total gallons pumped from the wells and that the dewatering effort will start on the west portion of the ONCA where primarily water is located. MWH reported that its water level measurements indicate that a significant amount of product is located on the eastern portion of the SBPA. IES assembled the discharge piping for the temporary electric pump in order to connect it to the pitless adapter in SVE-50. MWH reported that it will receive the pump on March 6, 2004, and install it on March 8, 2004.

MWH continued to operate the groundwater treatment plant (GWTP) at 26 gpm. MWH continued to vent vapors from the tanks and the lamella clarifier in the GWTP to the Global thermal oxidizer unit 2. MWH also continued to operate the Off-Site Containment Area ISVE system, processing vapors through the Global thermal oxidizer unit 2. MWH reported that it will resume operating the ONCA SBPA ISVE system once it evaluates the dewatering progress in the ONCA.

**Topics of Concern:**

- None to report.

**Concern Resolution:**

- None to report.

**Upcoming Activities:**

- IES to install the temporary electric pump in an ONCA SBPA ISVE system well on March 8, 2004.
- MWH to remove and clean the pumps in the ONCA SBPA ISVE system dual phase extraction wells.
- MWH to line the Durr thermal oxidizer unit 1 scrubber to prevent corrosion.
- MWH to conduct baseline sampling for its chemical oxidation treatability study in the south area starting on March 8, 2004.
- MWH to conduct the semiannual groundwater sampling event on March 15, 2004.
- MWH to continue operating the OFCA ISVE system and resume operating the ONCA SBPA ISVE system.
- MWH to chip the logs on the OFCA cover for placement in the wetland paths to monitoring wells.
- MWH to investigate benzene levels in the lower aquifer in the wetlands area.

Signature: Leigh Peters

Date: March 15, 2004

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**Weekly Oversight Summary Report No. 158**  
**ACS Superfund Site WA57, 46526.238**

**Reporting Period:** Week of March 8, 2004.

**BVSPC O/S Dates:** March 8 and 11, 2004 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	6	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	2	Specialty Contractor
Austgen	1	General Contractor
PSA Environmental	2	Drilling Contractor

**Construction Activities**

**Major Activities:**

- Independent Environmental Services installed a temporary electric pump in On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system wells in order to increase dewatering efforts in the area.
- Austgen and Montgomery Watson Harza repaired piping and a pump associated with the Global thermal oxidizer unit 2.
- Montgomery Watson Harza performed the baseline sampling for the chemical oxidation treatability study in the south area near Colfax and Reder Roads.
- Montgomery Watson Harza held the biweekly construction coordination meeting on March 11, 2004.

**Activities Performed:**

Independent Environmental Services (IES) completed assembling the temporary electric pump and installed it in On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system well SVE-46. IES connected the discharge piping from the pump to the pitless adapter in dual phase extraction (DPE) well SVE-50. IES removed the pump from SVE-50 and wrapped it in plastic prior to connecting the discharge piping. IES performed air monitoring in the breathing zone with a photoionization detector (PID) during the activities at the wells. IES reported that it observed elevated PID readings at the well head; however, the PID readings in the breathing zone were 0 ppm. IES voluntarily wore half face respirators during the pump removal and installation process. The pump is powered by a temporary power line connected to the power supply in the blower shed.

Montgomery Watson Harza (MWH) measured the water levels in the ONCA SBPA ISVE wells and observed that the majority of the wells located on the western portion of the cover were dry. MWH proceeded to operate the ISVE system, attempting to pull vapors from the dry wells. When the system began operating, MWH observed a water column in the piping for most of the dry wells except for five. MWH shut down the system and measured the water levels in some of the wells that contained water at the blower shed. MWH observed that these wells were still dry and believes that the water is present in the yard piping between the well and the blower shed. MWH reported that it will investigate clearing these lines of the water.

MWH reported that it shut down the Global thermal oxidizer unit 2 on March 10, 2004, because of a leaking pipe and high pH in the scrubber water. MWH also shut down the groundwater treatment plant (GWTP) because the Global thermal oxidizer unit 2 processes the vapors from the aeration/equalization tank T-102. MWH and Austgen repaired the leaking pipe on March 11, 2004. MWH reported that the caustic pump for the unit was clogged and reconfigured the piping in order for the caustic pump from the Durr thermal oxidizer unit 1 to supply caustic to the Global thermal oxidizer unit 2. MWH resumed operating the Global thermal oxidizer unit 2 on March 11, 2004, processing vapors from the aeration/equalization tank and manually controlling the caustic addition to the unit. MWH did not operate the Off-Site Containment Area (OFCA) ISVE system on March 11, 2004, because it did not have programming control over the Durr caustic pump. MWH disassembled the Global thermal oxidizer unit 2 caustic pump on March 12, 2004, and cleared the obstruction. MWH reconnected the appropriate caustic pump to the unit and resumed processing the OFCA ISVE vapors.

MWH conducted the baseline sampling for its chemical oxidation treatability study in the south area near Colfax and Reder Roads. MWH collected soil samples from the impacted smear zone for analysis by ISOTEC to determine the appropriate concentration of modified Fenton's Reagent that should be applied to the treatment area. MWH also collected several soil and groundwater samples from the perimeter of the proposed treatment area to further delineate the north and east boundaries of the smear zone. Based on its field observations, MWH believes that the smear zone extends further to the north and east than originally thought. MWH reported that it will evaluate its proposed treatment area to determine whether it should be extended or adjusted to incorporate these additional areas.

Black & Veatch Special Projects Corp. attended MWH's biweekly construction coordination meeting held at the site on March 11, 2004.

**Topics of Concern:**

- None to report.

**Concern Resolution:**

- None to report.

**Upcoming Activities:**

- MWH to remove water from the ONCA SBPA ISVE system yard piping.
- MWH to remove and clean the pumps in the ONCA SBPA ISVE system DPE wells.
- MWH to line the Durr thermal oxidizer unit 1 scrubber to prevent corrosion.

- MWH to conduct the semiannual groundwater sampling event on March 15, 2004.
- MWH to continue operating the OFCA ISVE system and resume operating the ONCA SBPA ISVE system.
- MWH to chip the logs on the OFCA cover for placement in the wetland paths to monitoring wells.
- MWH to investigate benzene levels in the lower aquifer in the wetlands area.

Signature: Leigh Peters

Date: March 17, 2004

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**WEEKLY CONSTRUCTION MEETING MINUTES  
FOR MARCH 11, 2004 MEETING  
AMERICAN CHEMICAL SERVICE, NPL SITE  
GRIFFITH, INDIANA**

**MEETING DATE:** Thursday, March 11, 2004

**MEETING TIME:** 10:00 AM

**MEETING LOCATION:** ACS Site - Site Trailer

**ATTENDEES:** Kevin Adler - U.S. EPA  
Leigh Peters - BVSPC  
Pete Vagt - MWH  
Rob Adams - MWH  
Lee Orosz - MWH  
Chris Daly - MWH  
Jon Pohl - MWH  
Chad Smith - MWH

**TOPICS:**

Health and Safety Summary

There have been no Health and Safety issues at the Site since the last meeting on February 26<sup>th</sup>. On March 1<sup>st</sup>, a crane lift was performed to disassemble the heat exchanger on Thermal Oxidizer/Scrubber Unit 1 (Therm Ox 1). During the crane lift, the Groundwater Treatment Plant (GWTP) was shut down, all electrical equipment associated with Therm Ox 1 was locked out and tagged out, and all valves on piping connected to Therm Ox 1 were shut. The activities were completed without incident and without any near-misses. Other activities conducted since the last meeting included operation of the GWTP, operation of the Off-Site Area in-situ soil vapor extraction (ISVE) system, gauging of the water levels in the Still Bottoms Pond Area (SBPA) ISVE wells, and performing the chemical oxidation baseline study work.

Groundwater Treatment Plant (GWTP) Status

The GWTP is currently operating at 25 to 30 gallons per minute (gpm). The GWTP was shut down on March 10<sup>th</sup> when Thermal Oxidizer/Scrubber Unit 2 (Therm Ox 2) was shut down. The shut down of Therm Ox 2 required that the GWTP be shut down because the vapors from the aeration tank, T-102, are currently treated by Therm Ox 2. It is anticipated that the GWTP will be brought back online March 11<sup>th</sup>. There have been no other issues with the GWTP. Routine maintenance has been performed on various GWTP components.



Off-Site Area/SBPA ISVE Systems

Therm Ox 2 was treating vapors from the Off-Site ISVE system, the lamella clarifier, and aeration tank T-102 until March 10<sup>th</sup> when the unit was shut down due to a leaking pipe. An inspection of the unit indicated that the caustic metering pump had become clogged causing the leak in the pipe and a drop in the pH in Therm Ox 2. The section of leaking pipe was replaced and the caustic pump was unclogged. It is anticipated that Therm Ox 2 will be brought back online on March 11<sup>th</sup>.

On March 4<sup>th</sup>, Global Engineering was on-site to inspect the heat exchanger for Therm Ox 1 to determine if it will be repaired or replaced. MWH is waiting for Global's report with the findings of their inspection and the recommendations for the heat exchanger.

On March 8<sup>th</sup>, Independent Environmental Services (IES) was on-site to install an electric pump in SVE-46 in order to draw the water down in this well. All of the ISVE wells on the west side of the SBPA were inspected and gauged on March 8<sup>th</sup>. The inspection and gauging indicated that 8 of the 10 wells that were gauged were dry. All of the dual phase extraction (DPE) wells in the SBPA were inspected. The water level in all of the DPE wells, except for one, were low enough that the pumps could be seen. An evaluation of the DPE well pumps indicated that five of the pumps are not working. The ISVE wells on the east side of the SBPA are being gauged and inspected on March 11<sup>th</sup>.

Once Therm Ox 2 is brought back online on March 11<sup>th</sup>, MWH will resume extracting vapors from wells that have been identified as dry. If vapors can be pulled at these wells, MWH will begin testing wells in groups to order to optimize the ISVE system.

1<sup>st</sup> Quarter 2004 Groundwater Sampling

The 1<sup>st</sup> Quarter 2004 Groundwater Sampling event is scheduled for the week of March 15<sup>th</sup>. A total of 33 wells will be sampled and the event will take 6 to 7 days. MWH will contact the residents of all properties with off-site wells prior to sampling to gain access to these properties.

Chemical Oxidation

The preliminary baseline sampling for the chemical oxidation began on March 8<sup>th</sup>. The preliminary delineation indicates that the smear zone may extend further north and east than originally anticipated. MWH will attempt perform further delineation of the smear zone to the north during the baseline sampling event. The chemical oxidation injection points may be shifted further north based on the field observations and sample results. The actual injection alignments will be discussed and agreed among MWH and the Agencies and their representatives prior to startup. The soil and groundwater samples collected during the baseline sampling will be compared to samples collected after the injection the chemical oxidation chemicals in order to determine the effectiveness of the oxidation process.

There have been no health and safety issues with the sampling event. The drilling crew has been very cautious with operating the drilling rig along Colfax Avenue. Air monitoring

There have been no health and safety issues with the sampling event. The drilling crew has been very cautious with operating the drill rig along Colfax Avenue. Air monitoring has been performed with a photionization detector (PID) around the drill rig and at the sampling table. There have been no detections with the PID. However, a sample collected near the truck and bus repair facility just south of the railroad tracks on Colfax Avenue did have a diesel fuel odor.

#### Looking Ahead Schedule

March 12, 2004 through March 25, 2004	<ul style="list-style-type: none"><li>• GWTP/BWES/PGCS operation and routine maintenance</li><li>• Off-Site ISVE System operation</li><li>• Complete inspection of the SBPA ISVE wells and being drawing vapors from dry wells</li><li>• Austgen Equipment will begin cutting the tree stumps for the wetlands access paths and moving the cut material to the On-Site area depending on the weather</li><li>• 1st Qtr. Groundwater Sampling</li></ul>
Health and Safety Items to Monitor	<ul style="list-style-type: none"><li>• Safety issues associated with the groundwater sampling event</li><li>• Chainsaw work associated with the wetlands access paths</li></ul>

Next Construction Meeting – Thursday, March 25, 2004, 10 AM

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**Weekly Oversight Summary Report No. 159**  
**ACS Superfund Site WA57, 46526.238**

**Reporting Period:** Week of March 15, 2004.

**BVSPC O/S Dates:** March 16 and 19, 2004 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	4	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Independent Environmental Services	2	Specialty Contractor
Ryan Construction	2	General Contractor

**Construction Activities**

**Major Activities:**

- Independent Environmental Services removed water from the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system yard piping by pressurizing the lines with air, blowing water from the blower shed header system to the wells.
- Montgomery Watson Harza began operating the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system, pulling vapors from select dry wells.
- Ryan Construction installed piping in the groundwater treatment plant for water supply from the city fire hydrant.
- Montgomery Watson Harza began the semiannual groundwater sampling event.

**Activities Performed:**

Independent Environmental Services (IES) removed water from the On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) system yard piping on March 15 and 16, 2004. IES used pressurized air to blow the water in the yard piping lines from the header system in the blower shed back to the ISVE wells. IES reported that it observed material resembling grout and sand removed from the yard piping to well SVE-86. IES reported that most of the lines contained water and/or product; however, a few wells had more solid material in the lines. IES also reported that the liquid levels in the wells located in the roadway were high. IES removed the liquid from the wells using the temporary electric pump. Montgomery Watson Harza (MWH) reported that it will continue to dewater specific wells in the ONCA SBPA ISVE system using the temporary electric pump as necessary.

MWH began operating the ONCA SBPA ISVE system on Wednesday, March 17, 2004, processing vapors through the Global thermal oxidizer unit 2. MWH reported that it plans to operate the system to ensure that it is functioning consistently before it begins monitoring the system in accordance with its *Performance Standard Verification Plan*. MWH also reported that it will prove-out the construction of the wells by obtaining flow through the wells for a minimum of 3 days, similar to how MWH tested the Off-Site Containment Area (OFCA) ISVE system wells.

MWH reported that Ryan Construction installed a connection to the exterior fire hydrant to supply city water to the groundwater treatment plant (GWTP) on March 17, 2004. MWH began filling tank T-1 with city water because the nanofiltration unit was not operating properly and T-1 was not filling properly. MWH acid washed the nanofiltration unit filters on March 18, 2004, to clean the filters. MWH reported that after it washed the filter, the unit was operating properly and tank T-1 was being filled properly. MWH operated the GWTP at 25 gpm.

MWH began its semiannual groundwater sampling event on March 15, 2004. MWH measured the water levels on March 15, 2004, and began sampling the monitoring wells. MWH reported that it will sample 33 monitoring wells for indicator volatile organic compounds. MWH also reported that select wells will be sampled for metals and bis(2-chloroethyl)ether, an indicator semi-volatile organic compound. MWH reported that it will complete the sampling event on March 23, 2004.

**Topics of Concern:**

- None to report.

**Concern Resolution:**

- None to report.

**Upcoming Activities:**

- MWH to line the Durr thermal oxidizer unit 1 scrubber to prevent corrosion.
- MWH to complete the semiannual groundwater sampling event on March 23, 2004.
- MWH to establish flow and test the ONCA SBPA ISVE system wells.
- MWH to remove and clean the pumps in the ONCA SBPA ISVE system dual phase extraction wells.
- MWH to continue operating the OFCA ISVE and the ONCA SBPA ISVE systems.
- MWH to chip the logs on the OFCA cover for placement in the wetland paths to monitoring wells.
- MWH to investigate benzene levels in the lower aquifer in the wetlands area.

Signature: Leigh Peters

Date: March 25, 2004

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**Weekly Oversight Summary Report No. 160**  
**ACS Superfund Site WA57, 46526.238**

**Reporting Period:** Week of March 22, 2004.

**BVSPC O/S Dates:** March 25, 2004 (Ms. Peters).

Personnel Summary Affiliation	No. of Personnel	Responsibility
Montgomery Watson Harza	4	Respondent's General Contractor
Black & Veatch Special Projects Corp.	1	USEPA Oversight Contractor
Vidimos	2	Specialty Metal Fabricator
Eagle Services	1	Specialty Contractor

**Construction Activities**

**Major Activities:**

- Montgomery Watson Harza completed the semiannual groundwater sampling event on March 23, 2004.
- Eagle Services evaluated the On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction system wells for clearing the well screens.
- Montgomery Watson Harza continued to operate the Off-Site Containment Area and On-Site Containment Area Still Bottoms Pond Area in-situ soil vapor extraction systems, processing vapors through the Global thermal oxidizer unit 2.
- Vidimos inspected the Durr thermal oxidizer unit 1 heat exchanger.
- Montgomery Watson Harza briefly shut down the Global thermal oxidizer unit 2 and the groundwater treatment plant on March 24, 2004, in order to perform routine maintenance on the oxidizer.
- Montgomery Watson Harza held the biweekly construction coordination meeting at the site on March 25, 2004.

**Activities Performed:**

Montgomery Watson Harza (MWH) completed its semiannual groundwater sampling event on March 23, 2004. MWH collected samples from 33 monitoring wells for indicator volatile organic compound analysis. MWH also collected samples from select monitoring wells for analysis for metals and bis(2-chloroethyl)ether, an indicator semi-volatile organic compound. MWH also reported that it observed high turbidity and particulates in several of the monitoring wells. MWH redeveloped some of the wells during the groundwater sampling activities. MWH reported that it will recommend development for additional wells prior to the September sampling event.

MWH continued to operate the Off-Site Containment Area (OFCA) and On-Site Containment Area (ONCA) Still Bottoms Pond Area (SBPA) in-situ soil vapor extraction (ISVE) systems, processing vapors through the Global thermal oxidizer unit 2. MWH reported that it has 26 wells on-line in the ONCA SBPA ISVE system; however, it has not observed significant flow from several of these wells. MWH reported that Eagle Services was onsite on March 24, 2004, in order to evaluate cleaning the wells screens for the ONCA SBPA ISVE system wells that are not producing flow. MWH reported that Eagle Services will be onsite on March 29, 2004, to jet clean the wells screens and vacuum the liquids for the wells.

Vidimos was onsite on March 22, 2004, to evaluate the damage sustained by the Durr thermal oxidizer unit 1 heat exchanger. Vidimos transported the heat exchanger offsite to its workshop to further estimate the repairs to the unit. MWH reported that it continues to evaluate the heat exchanger.

MWH continued to operate the groundwater treatment plant (GWTP) at 25 gpm. MWH reported that it briefly shut down the GWTP because it shut down the Global thermal oxidizer unit 2 for routine maintenance. MWH reported that the GWTP and the Global thermal oxidizer unit 2 were shut down for approximately 4 hours on March 24, 2004.

Black & Veatch Special Projects Corp. (BVSPC) attended the biweekly construction coordination meeting held at the site on March 25, 2004.

**Topics of Concern:**

- None to report.

**Concern Resolution:**

- None to report.

**Upcoming Activities:**

- Eagle Services to clean the ONCA SBPA ISVE system well screens.
- MWH to line the Durr thermal oxidizer unit 1 scrubber to prevent corrosion.
- MWH to establish flow and test the ONCA SBPA ISVE system wells.
- MWH to remove and clean the pumps in the ONCA SBPA ISVE system dual phase extraction wells.
- MWH to continue operating the OFCA ISVE and the ONCA SBPA ISVE systems.
- MWH to chip the logs on the OFCA cover for placement in the wetland paths to monitoring wells.
- MWH to investigate benzene levels in the lower aquifer in the wetlands area.

Signature: Leigh Peters

Date: March 29, 2004

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**WEEKLY CONSTRUCTION MEETING MINUTES  
FOR MARCH 25, 2004 MEETING  
AMERICAN CHEMICAL SERVICE, NPL SITE  
GRIFFITH, INDIANA**

**MEETING DATE:** Thursday, March 25, 2004

**MEETING TIME:** 10:00 AM

**MEETING LOCATION:** ACS Site – Site Trailer

**ATTENDEES:** Kevin Adler – U.S. EPA  
Leigh Peters – BVSPC  
Todd Lewis – MWH  
Rob Adams – MWH  
Lee Orosz - MWH  
Chris Daly – MWH  
Jon Pohl – MWH  
Chad Smith – MWH  
Amy Clore - MWH

**TOPICS:**

Health and Safety Summary

There have been no Health and Safety issues at the Site since the last meeting on March 11<sup>th</sup>. It was noted that during the crane lift to disassemble the heat exchanger on Thermal Oxidizer/Scrubber Unit 1 (Therm Ox 1) on March 1<sup>st</sup>, that the crane operator was talking on a cell phone. The issue was addressed with the operator and he was informed that cell phone use is prohibited while operating the crane. Other activities conducted since the last meeting included operation of the GWTP, operation of the Off-Site Area in-situ soil vapor extraction (ISVE) system and the Still Bottoms Pond Area (SBPA) ISVE system, and 1<sup>st</sup> quarter 2004 groundwater sampling.

Groundwater Treatment Plant (GWTP) Status

The GWTP is currently operating at 25 gallons per minute (gpm). There have been no issues with the GWTP since the last meeting on March 11<sup>th</sup>. Routine maintenance has been performed on various GWTP components.

Off-Site Area/SBPA ISVE Systems

Thermal Oxidizer/Scrubber Unit 2 (Therm Ox 2) is currently treating vapors from the Off-Site ISVE system, the SBPA ISVE system, and the aeration tank, T-102. Therm Ox 2 was taken offline for four a period of 4 hours on March 24<sup>th</sup> for routine maintenance.

An inspection of Therm Ox 1 heat exchanger by Global Engineering indicated that it would have to be replaced. Global has provided MWH with a cost estimate for replacement of the heat exchanger. A second inspection and price estimate will be received shortly.

As discussed during the last meeting, an inspection of the SBPA ISVE and dual phase extraction (DPE) wells indicated that the water levels in most of the wells have decreased significantly. However, it has been observed that water was present in many of the conveyance pipes. To clear the conveyance piping the water in the conveyance pipes was pushed back into the wells with compressed air. Further testing of the wells indicated that many of the wells showed a high resistance to vapor extraction. Work is scheduled for March 29<sup>th</sup> to jet and vacuum out wells where to assure the well screens are not plugged. . MWH will remove the pumps from the DPE wells that need to be cleaned if it is necessary to accommodate Eagle Services' equipment. Once these wells have been cleaned out, MWH will evaluate the ISVE system again to quantify vapor removal efficiency. The ACS facility will be informed that these activities are taken place.

1<sup>st</sup> Quarter 2004 Groundwater Sampling

The 1<sup>st</sup> Quarter 2004 Groundwater Sampling event was completed on March 23<sup>rd</sup>. It is anticipated that the data reports will be received from the laboratory in 2-3 weeks. Increased turbidity and increased particulates were observed in many of the wells. MWH will develop a recommendation regarding maintenance and perhaps redevelopment activities on some of the wells before the next round of groundwater sampling in September.



Looking Ahead Schedule

March 26, 2004 through April 1, 2004	<ul style="list-style-type: none"><li>• Jetting and vacuuming of SBPA ISVE and DPE wells</li><li>• GWTP/BWES/PGCS operation and routine maintenance</li><li>• Off-Site ISVE system and SBPA ISVE system operation</li><li>• Begin cutting the tree stumps for the wetlands access paths and moving the cut material to the On-Site area depending on the weather</li></ul>
Health and Safety Items to Monitor	<ul style="list-style-type: none"><li>• Safety issues associated with the jet and vacuum event</li><li>• Chainsaw work associated with the wetlands access paths</li></ul>

Next Construction Meeting – Thursday, April 1, 2004, 10 AM

AK/JDP/TAL/PTV

J:\209\0601 ACS\0202 MWA PM\Meeting Minutes 2004\Meeting Minutes 03-25-04.doc

(56)

2/27/04 J. H. E. P. R. H.

0930 Review MNH Chemox WP

1000 Spoke W/L. Dross - MNH planning to hook up short term electric pump to be placed in ONCA ISVE wells for localized dewatering. Plan to move from well to well - Pull electric from blower shed and discharge to water conveyance lines below ground through pitless adapter. Similar controls to existing pumps used onsite.

1035 Left Site for day

~~J. H. E. P. R. H.~~  
2/27/04

(57)

3/1/04

J. H. E. P. R. H.

0735 Arrive onsite; light rain, overcast, 40°F  
light SE wind.

Personnel Present:

Lee Dross	MNH
Terry Frisk	Ryan
Dave Hinkle	Ryan
Jerry Clark	Ryan
Luigi Petrus	BVSPC

Activities Today - Crane lift to move  
Durr thermox heat exchanger.

0800 Crane operator (Central Crane) onsite,  
set up crane. L. Dross with MNH shutting  
down GWP and Thermox 2 for pick.

0815 Spoke w/L. Dross. He reported MNH ready  
to set up temporary pump in ONCA-SBPA  
ISVE walls. This week MNH to run electrical  
from building and will discharge water  
to the image TP underground conveyance piping  
through the pitless adapter at a DPE well -  
one on either side of road. MNH to record  
total flow and rate.

0825 Roll 58 photo 11 facing NE of Doug Hinnicks  
locking out electrical supply for crane pick.

0840 MNH + Central Crane performing crane  
inspection.

J. H. E. P. R. H.

(58)

3/11/04

J. J. J. J.

0842 Roll 53 Photo 12 facing WSW of heat

visually inspecting ball on crane.

0903 Roll 53 Photo 13 facing E of Ryan

attaching tag line on duct being moved

by crane

0905 Roll 53 Photo 14 facing E of rooming

dust.

0923 Roll 53 Photo 15 facing NE of Ryan

moving the next 1 heat exchanger for

removal.

0930 Roll 53 Photo 16 facing E of Ryan

checking rigging and taglines

0941 Roll 53 Photo 17 facing NW from break tank

of Ryan lifting heat exchgr

0943 Roll 53 Photo 18 facing NW from break tank

of Ryan moving heat exchgr.

1008 Roll 53 Photo 19 facing N of interior

of oxidizer chamber to thermox 1

1015 Roll 53 Photo 20 facing N of corridor

in heat exchanger - point where gas

exits oxidizer chamber.

1030

Left site for day

J. J. J. J.  
3/11/04

0800 Arrive onsite; 40°F. Overcast; light NE wind

Personnel Present:

Lee Dross

Matt Meserich

Mike Pettick

Terrence Jones

Lynne Butts

0805 MMH completed tool box HTS w/ IES. IES

to pull each 5000 pump + use electrical pump

to isolate deaerating. to discharge through

SVE-50 filters to go conveyance from

electric pump. east side. MASHY product.

last side water. MMH to operate SVE

system to evacuate initial vapors from wells

to be opened.

0825 2 engineers w/ Global mail to inspect thermox

diff. levels and vent system

0832 Roll 53 Photo 21 facing W of Global inspection

Duct heat exchanger.

0850 Global to measure heat exchanger and provide

estimates on replacing and just replacing

SS shell. Global believes tubes in good

shape but wind down on dissolving

Global also reported it has tubes thermox in

good shape! After 5/11/05 shell made with

J. J. J. J.

3/4/04

J. J. J. J.

(59)

(60)

3/4/04

JPS/SPH

thin grade stainless steel

- 0915 IES onsite - measure depth to pitless to connection to discharge pipe. MWH will tape up wells w/ piping connections but will not have rigid caps. MWH has informed ACS of activities.

- 0922 Roll 53 Photo 22 facing S of IES monitoring breathing zone with PID. IES reported all measurements at 0 ppm.

- 0950 L. Dross + M. Mesarch began air monitoring in GWTB - observed odors near Lammella and T-2 after starting up ONCA 15VE blower. L. Dross switch tank vent to carbon canister and opened doors to ventilate plant.

- 1015 IES assembling for pump - connecting piping and flowmeter. Waiting for pump to be delivered to site. Simalabs onsite collecting samples for routine process analysis of GWTB. Austgen was on site 3/2 - 3/3 working on electrical from blower shed to across road for ONCA temp pump.
- 1130 MWH received notification that electric pump not being delivered today - Postpone to 3/8/04
- 1150, Left site for day

JPS/SPH

(61)

3/8/04

JPS/SPH

0735 Arrive onsite. Partly Sunny, 32°F. light NE wind.

Personnel Present:

L. Dross	MWH
Mike Patch	IES
Matt Mesarch	MWH
Terrance Jones	IES
Chad Smith	MWH
L. Peters	BUSPC

Activities Today:

1. IES to insert temp electric pump into ONCA 15VE wells - begin operation
2. MWH to perform baseline geoprobe sampling for Chemox study.

0745 MWH calibrating PIDs - L. Dross to perform H<sub>2</sub>S monitoring w/ PID FID for IES work.

0750 Roll 53 Photo 23 facing E of electric pump to be placed in ONCA 15VE wells for dewatering starting to pump from SVE-59; pump water through SVE-50.

0815 MWH hold H<sub>2</sub>S Kickoff meeting w/ PSA Environmental. (Geoprobe Subcontractor)

Discussed air monitoring, PPE and activities.

0845 MWH waiting for training certificate for PSA division MWH setting up for sampling

JPS/SPH



(64)

3/5/04

J. J. Spar

1400 Went to DNCR SPA + spoke w/ Lee Cross

regarding electric pump. LES currently

checking DCE wells to see if pitless is

leaking and water level is L. Cross reporting

that N + W DCE wells are not leaking and

wells are mostly dry. LES continues to

check perimeter wells. L. Cross not sure

of when like to operate electric pump

since other wells dry - he reported that if

will continue to operate in one size well

and will upgrade.

1435 MWH + divers begin probing ACS-55-B5-02

Roll 54 Photo 5 facing S of 15-20'

interval + smear zone starting at ACS-55-B5-100

1450 Roll 54 Photo 6 facing NE of gravel - stilled

black at ACS-55-B5-02. 31D peak at 150 ppm

Roll 54 Photo 7 facing E of 20-25' bis interval

(top to left). Shows grading of smear zone

back to natural material.

1502 Roll 54 Photo 8 facing S of MWH

smear zone

Roll 54 Photo 9 facing W of MWH collecting

1610 left site for day

J. J. Spar

gave the 1502's analysis

Roll 54 Photo 10 facing W of MWH collecting

smear zone

Roll 54 Photo 11 facing S of MWH

back to natural material.

(top to left). Shows grading of smear zone

Roll 54 Photo 12 facing E of 20-25' bis interval

black at ACS-55-B5-02. 31D peak at 150 ppm

Roll 54 Photo 13 facing NE of gravel - stilled

interval + smear zone starting at ACS-55-B5-100

1450 Roll 54 Photo 14 facing NE of gravel - stilled

black at ACS-55-B5-02. 31D peak at 150 ppm

Roll 54 Photo 15 facing S of 15-20'

interval + smear zone starting at ACS-55-B5-100

1435 MWH + divers begin probing ACS-55-B5-02

Roll 54 Photo 5 facing S of 15-20'

interval + smear zone starting at ACS-55-B5-100

1450 Roll 54 Photo 6 facing NE of gravel - stilled

black at ACS-55-B5-02. 31D peak at 150 ppm

Roll 54 Photo 7 facing E of 20-25' bis interval

(top to left). Shows grading of smear zone

back to natural material.

1502 Roll 54 Photo 8 facing S of MWH

smear zone

Roll 54 Photo 9 facing W of MWH collecting

1610 left site for day

0730 Arrive onsite, 32°F, sunny SE wind.

Personnel onsite:

X Lee O732

Tim Kirkland

Amy Clark

X Leigh Ratns

7735 L. Cross reported pH problems with

Thermax 2 scrubber. Shut down system

yesterday at 2:00 - also shut down GMP

since vapors going through Thermax 2.

MWH and Arstiga working in tankish eating

scrubber - MWH plans to shift DNCR

ISVE system today since water levels

indicated that the area is well dewatered

and screens are exposed. In Messier's

reported that unit was not getting

any measurable flow from wells - but

was registering vapors.

0740 - E. Smith reported that the north borgs

had black staining but did not register

PID hits - E. Smith hypothesized that

may be impacted with DROs. C. Smith

also reported that the treatment area

may be further expanded north. MWH

to advance east locations today

J. J. Spar

3/11/04

J. J. Spar

(65)

(66)

3/11/04 Jeff Epstein

- 0800 MNH calibrating field equipment for geoprobe work. PSA Environmental on site. MNH waiting for valve to repair thermox 2 scrubber.
- 0830 MNH to monitor water levels in ONCA 15VE wells. MNH to wear respirators during measurements.
- 0840 observe MNH set up for geoprobe sampling. Mob - ACS-SS-DL-04. - moved to driveway area at 1002 Radar Road. C. Smith reported survey area scheduled to survey probe locations tomorrow.
- 0908 Roll 158 Photo 1 facing NW of staining observed at 19 ft at ACS-SS-DL-04. PID reading at 32 ppm.
- 0911 Roll 158 Photo 2 facing NW of MNH measuring PID at 20-25' sample from ACS-SS-DL-04 PID readings peaked at 60 ppm near 21 ft bts.
- 0922 C/M encountered at approx 28 ft b/s at ACS-SS-DL-04
- 0930 Roll 158 Photo 3 of MNH calibrating VOC sample using ENCORE at ACS-SS-DL-04 at 20'
- 0945 Return to GWTP. MNH waiting for valve. T. M. Kirkland performing maintenance

Jeff Epstein

(67)

3/11/04

Jeff Epstein

- on thermox 2 scrubber. replacing gasket material.
- 1000 Biweekly Construction Coord Mtg. (x previous)  
Attendees: R. Adams MNH  
Lee Chase MNH Chad Smith MNH  
via phone:  
Kevin Adler EPA Peter Vagst MNH  
Chris Daly MNH John Pahl MNH  
HHS: Successful crane lift on 3/1/04.  
performed lockout/tagout + shut down GWTP. Sampling + ONCA 15VE electric pump installation went well.  
GWTP: Down today b/c of thermox 2 problem  
resume today - at 25-30 gpm  
Thermox 2: went down 3/10/04 at 2:00 pm  
shut down by MNH because of leak in pump. Electric pump not operating properly and pH of scrubber was at 1 pH units.  
MNH replacing leaking pipes today + expect to resume operating today.  
Thermox 1: Prior thermox scrubber heat exchanger inspected by Global on 3/4/04  
MNH evaluating options.  
ONCA 15VE: MNH found wells dry (except for 2) in west portion of NW field

Jeff Epstein

(68)

3/11/04

Jeff E. Pate

MWH measured all ponds today + will pump from east side with temp. electric pump for dewatering. MWH plans to test out West wells today and turn on SVE system.

Geoprobe completing borings today - observed smear zone to N and may shift treatment area to the north. MWH to collect additional dewatering samples in future - may probe N boundary today for visual observation. PID = 0 ppm in breathing zone.

GW Sampling: 3 wells next week for indicator VOCs, SVOC list (2-chloro-ethyl) ether and arsenic

Lock thread: Austgen to cut logs next week weather permit. Dewater ONCA w/ electric pump

H<sub>2</sub>S lock thread: chainsaw #25,

Sampling H<sub>2</sub>S

1035 Mtg conclude - next meeting 3/25/04 010000

1100-1130 spoke with L. Campbell re site activities.

1130 Observe C. Smith groundwater sample at ACS-SS-DL-05. He reported that a smear zone was also observed here with black

(69)

3/11/04

Jeff E. Pate

striated soil, similar to ACS-SS-DL-04. C. Smith reported that he plans on taking geoprobe sample 5 feet west of MW17 to visually observe if a smear zone is present.

1222 Roll 58 Photo 4 facing N of C. Smith field filtering sample ACS-GW-DL-05 for dissolved metals.

1230 Roll 58 Photo 5 facing NE of geoprobe screen used for water sampling.

1250 PSA mob to push probe approx 15 ft east of MW17 at the fence line. MWH to visually classify soils at this location to see if smear zone extends past upgradient well MW17. (DL-06)

1300 Roll 58 Photo 6 facing W showing sample interval 15-20 ft bls at ACS-GW-DL-06

1305 Roll 58 Photo 7 facing W of sample interval 20-25 ft at ACS-SS-DL-06

1315 MWH collected VOC sample from 17-18 feet bls at ACS-SS-DL-06.

1320 Went to GWTP - Thermo 2 at temp; L. Oakes had to bypass Thermo 2 caustic pump and use Thermo 1 caustic pump. He also reported some east SIBPA SVOC wells were dry today.

1330 MWH and PSA geoprobing at ACS-SS-DL-05,



(70)

3/11/04 Jeff E. Rux

located on city R-OW across from  
OFCA pierometer - P111 on east side  
at Colfax.

1340 Roll 58 Photo 8 facing NE of ALS-SS-D-07  
at 15-20 ft interval

1350 C. Smith collecting sample from 19 ft b/s from  
ALS-SS-D-07. No black stained smear  
zone observed at this location. gray gravel  
sands from 18-25 ft b/s.

1400 Return to GMP. Thermox 2 operating with  
T102 vapor. GMP operating.

1440 Went to ONCA SBPA - M. Mesarch to  
begin operating 15V6 systems, pulling vapors  
from 13 "dry" wells. - 64, 68, 76, 59, 70,  
71, 81, 85, 73, 74, 44, 51, 60

1455 Roll 58 Photo 9 facing SW of M. Mesarch  
measuring flow through SVE-60.  
Wells 48, 59, 68 and 76 all pulling in  
water - Also 74, 73, 75,  
MW11 pulling vapor from SVE-51, 70, 71,  
SVE-81, SVE-85

1515 MW11 measured water levels in 4 "dry"  
wells that water being pulled from - wells  
still dry - possible water in piping.

1530 L. Drossel of MW11 reported that he was

(71)

3/11/04

Jeff E. Rux

operating thermox 2 - pulling aeration tank  
vapors only since using thermox 1 caustic  
pump which is not connected to the  
control programming. MW11 monitoring pH  
and controlling caustic feed manually.

L. Drossel reported he will disassemble  
thermox 2 caustic pump tomorrow to inspect  
and repair - he reported neither OFCA  
nor ONCA 15V6 systems will be operated  
until caustic pump is repaired and can  
be controlled through the program.

1545 Left site for day.

~~Jeff E. Rux~~  
~~3/11/04~~

(72)

3/16/04

Jgh &amp; Pat

0730 Arrive onsite, 30°F; NE wind, overcast, light snow.

Personnel Present:

Lee Dross MWH

Amy Cloer MWH

Rudy Steh MWH

Lough Peters BVSFC

0735 Spoke w/ R. Stein - GW sampling today sampled MW2 yesterday - begin with MW1 today.

0740 Spoke w/ L. Dross - IES out yesterday blowing water from ONCA SDPA/SVE lines back to well from header system. IES to be onsite today to move temp electric pump to a well w/ the roadway since high water levels there. MWH to block off road. L. Dross also reported GWTP intermittent operation over weekend - problems with manifold causing T-1 to not fill. Therefore sand filters can't be backwashed - MWH filling T-1 with city water. Will get programmer onsite to check controls. Thermox 2 operating with ONCA TP OFCA 15KE vapors. MWH repaired

(73)

3/16/04

Jgh &amp; Pat

caustic pump and also waiting on a fitting for pump, but unit is operating. 0755 Mike Petrich of IES onsite. - To measure water levels in ONCA, insert electric pump where water levels is high to dewater and to then blow out SVE lines.

0805 Observe MWH set up on MW1

0812 Roll 55 Photo 10 facing N of MW1 installing pump at MW1

0820 Roll 55 Photo 11 facing NE at ground of initial purge water at MW1 - Well should be redeveloped - may minimize particulates.

0805 MWH collect VOC sample at MW1 stabilized parameters.

pH = 6.4; Cond = 470  $\mu$ S/cm = 45 DO = 0.74 Temp = 8.3 ORP = 104

0907 Roll 55 Photo 12 facing N of MW1 collecting VOC sample at MW1

0940 Went to ONCA to observe IES.

IES blowing air SVE vapor lines - Leigh observed odor in blower shed - IES decided to voluntarily wear half face respirator in building rather than get PID. IES to switch electric pump to control

(74)

3/16/04

J. G. P. R. T.

Wells located in road. IES reported that when it blew out some of the vapor lines, it observed a solid mixture coming out of the - with some particulates - possible sand or bentonite-grout - hypothesis.

0950 Roll 58 Photo 13 facing NW at solids

that came out of vapor line to SVE-86

1000 Spoke with L. Orsz - he reported that if ONCA 15VE wells aren't operating - then MNH to contract Bayle to jet out screens - then will try to pull vapors again

1025 MNH mob to MW23 for sampling.

1030 Roll 58 Photo 14 facing S of MNH

measuring water level prior to purging at MW23.

1100 MNH collecting VOC sample at MW23

PH = 7.25, Cond = 0.15 S/m, Turb = 22

DO = 0.56 Temp = 9.5 ORP = -100 mV

flow = 0.01 L/min

1102 Roll 58 Photo 15 facing E of MNH collecting and copying VOC sample from MW23.

1120 Went to ON CA IES pumping liquid from roadway wells. Thunk at pump from SVE-72

1122 Roll 58 Photo 16 facing SE at IES

(75)

3/16/04

J. G. P. R. T.

removing electric pump from 72 - Note thick black oil coating pump

SVE-72 and SVE-86 have high water levels.

Remaining wells have sufficiently low levels.

MNH to start operating ONCA SBPA 15VE system and will begin performance

monitoring of the system once they are sure everything is operating properly. Will place out construction of wells with 3 days of operation - similar to ONCA 15VE system present.

1140 Left site for day

J. G. P. R. T.  
3/16/04

(76)

3/19/04

J. P. Pater

0740 Arrive onsite, 35°F, overcast, E wind.

Personnel Present:

Lee Orosz. MNH

Chad Smith. MNH

Matt Mesarch. MNH

Lough Peters. BVSPC

L. Orosz reported GWP and ThermoX 2 operating well - ThermoX 2 processing DFCA vapors and ONCA 500A 15VE vapors from 27 wells. MNH reported ONCA 15VE system on yesterday - MNH to monitor for water and will begin BVP monitoring when consistent operation.

0755 C. Smith reported that they are halfway through sampling - Problems with getting stuck in mud. Start sampling today at MW54R.

0800 Roll 59 Photo 17 facing SW of MNH connecting Ground to pump for MW54R. C. Smith redeveloped, MW94, MW11 and MW12.

0810 MNH begin purging MW54R at 300 ml/min.

0850 MNH collect VOC samples from MW54R.

(77)

3/19/04

J. P. Pater

0850 Roll 59 Photo 18 facing NW of MNH sampling VOCs at MW54R.

0920 MNH mob to MW39. Water level at 433 ft below toe.

0926 Roll 59 Photo 19 facing E of MNH collecting water level prior to pumping at MW39. MW39 with a lot of particulates - may need to be redeveloped.

1033 MNH collect sample at MW39.

1116 Mob to MW15 - observe MNH set up to sample

1118 Roll 59 Photo 20 facing N of MNH begin purge MW15.

1227 Roll 59 Photo 21 facing N of MNH checking flow rate and recording field parameters at MW15.

1205 Roll 59 Photo 22 facing N of MNH collecting GUN sample for arsenic analysis at MW15.

1220 MNH complete activities at MW15.

1240-1315 Worker LKly reports

1325 MNH mob to MW28.

1354 MNH begin purging MW28 at 350 ml/min.

1430 MNH collect VOC samples from MW28.

Roll 59 Photo 23 facing SW showing MNH checking for air bubbles in VOC sample from MW28.

1435 MNH decommissioning pump after sampling MW28

(78)

3/19/04 *JEP*1440 Roll 158 Photo 24 facing NW MWH  
placing pump into MW17.

MWH purge MW17

1528 MWH sample MW17 for VOCs.

1529 Roll 158 Photo 25 facing SE showing MWH  
collecting VOC sample at MW17.1535 MWH complete for sampling at MW17  
MWH done with sampling activities for  
day - to pack samples for shipping

1550 Left Site for day.

*JEP*  
3/19/04

(79)

3/25/04 *JEP*

0730 Arrive Onsite; 55°F, Overcast, NW wind.

Personnel Present:

\* Lee Orsz MWH

\* Leigh Peters BVSFC

Spoke with L. Orsz - Thermox 2 down  
yesterday for 3 hrs for maintenance work -

Resumed operating with OFCA vapors.

MWH restarted OFCA SBA 15E this

morning. L. Orsz reported 26 ONCA

wells open; but MWH not getting much

from from wells. Eagle Services to be out

on Monday clearing out wells. L. Orsz

also reported Vidlines on site 3/22 and

inspected thermox 1 heat exchanger for  
repair.

0800 Work on weekly/monthly reports for March

1000 Biweekly Construction Coord. Mtg.

Attendees - \* on previous plus via phone

Kevin Adler EPA Todd Lewis MWH

Rob Adams MWH Jon Pohl MWH

Chad Smith MWH Amy Cloke MWH

H&amp;S No issues, primary work on site was

sampling crew and IES working on ONCA SVE.

L. Orsz reported on Crane Lift - L. Peters

observed operator on phone during lift - MWH

*JEP*

(80)

3/25/04 *Theresa*

instructed operator to turn off phone  
or not use verpenna during lift.

GUID: routine maintenance, up at 25 gm.  
Theresa 2: Running on OCA and ONCA  
ISVE vapors and T-102 vapors. Down  
yesterday (along w/ GWT) for 4 hrs for  
maintenance.

Theresa 1: Global provided replacement

cost. Must get Sigma estimate from Williams.

Williams out on 3/22 and took unit back to

his shop. Should have estimate this week.

ONCA ISVE: LES blew out water from lines.

Eagle to be made next week to check

will screens in wells with no flow.

AN sampling: completed 3/23 - Results

in 2-3 weeks. Must observe high turbidity

at several wells and many proposed

redevelopment. MWH did redraft of Bore.

Look ahead: Eagle serviced - monitoring

and coordinate with ACS

Aviation - HHS w/ chemists, observers and

safety guards

1020 Mth conclude - Next mth 4/10 @ 1000

1030-1035 Update & completion site activities.

1045. Let site go day

*Theresa*

3/30/04

*Theresa*

0810 Arrive onsite, Sunny, 50°F, SW wind

Personnel Present

Lee Orosz

Mike Rasmick

Tan Thies

Terrence Jones

Jose Guzman

TK Kladetz

Long Ricks

Activity Today

1. LES pulling ONCA ISVE system. DFE pumps

2. Eagle cleaning and jacking ONCA ISVE wells.

0815 Went to ONCA to observe work. LES and

Eagle wearing respirators - LES wearing half face

respirator, Eagle wearing full face and vacuuming SVEs.

0820 Roll 156 photo 1 facing S of LES pulling pump.

from SVE - 65 Note oily product coming pump.

0822 Roll 156 photo 2 facing SE of Eagle

vacuuming out SVE - 66.

0830 Roll 156 Photo 3 facing SE of Eagle inspecting

jacking unit in SVE - 66.

0845 Spoke with T. Thies - He was with

Smith performed air monitoring yesterday -

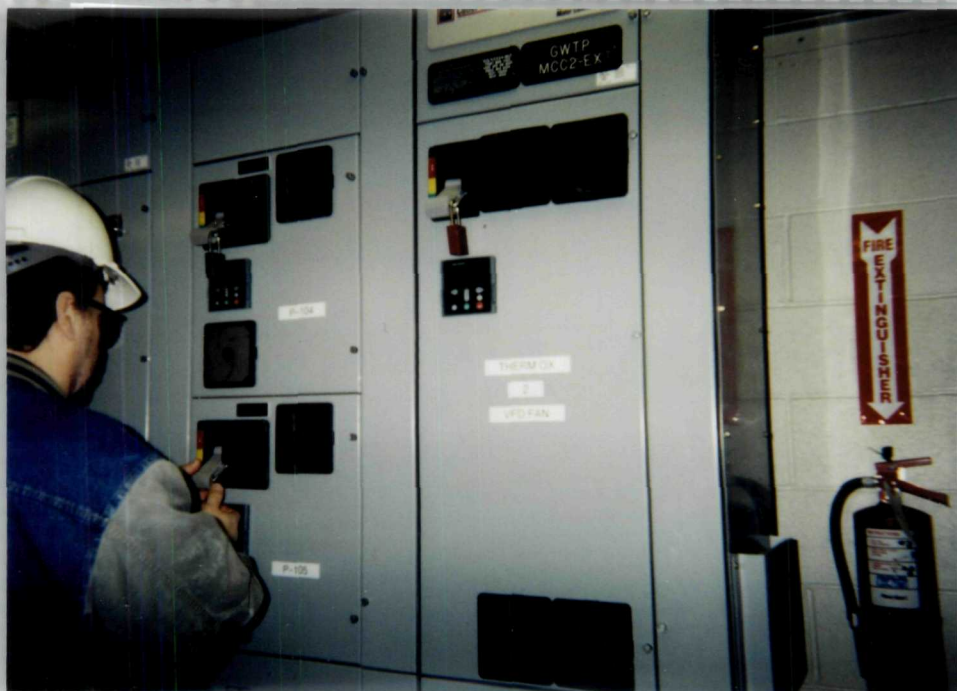
observed peak around 8:00 am on PID but

never got a ppm. Must still register

*Theresa*

(81)





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #11

Date: 03-01-04 Time: 08:25

Photographer: Leigh Peters

Description: Photo facing northeast showing MWH locking out the electrical supply for the thermal oxidizers in preparation of the crane lift.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #12

Date: 03-01-04 Time: 08:42

Photographer: Leigh Peters

Description: Photo facing west-southwest showing MWH visually inspecting the ball on the crane as part of the equipment inspection.



Site: American Chemical Service, Inc.

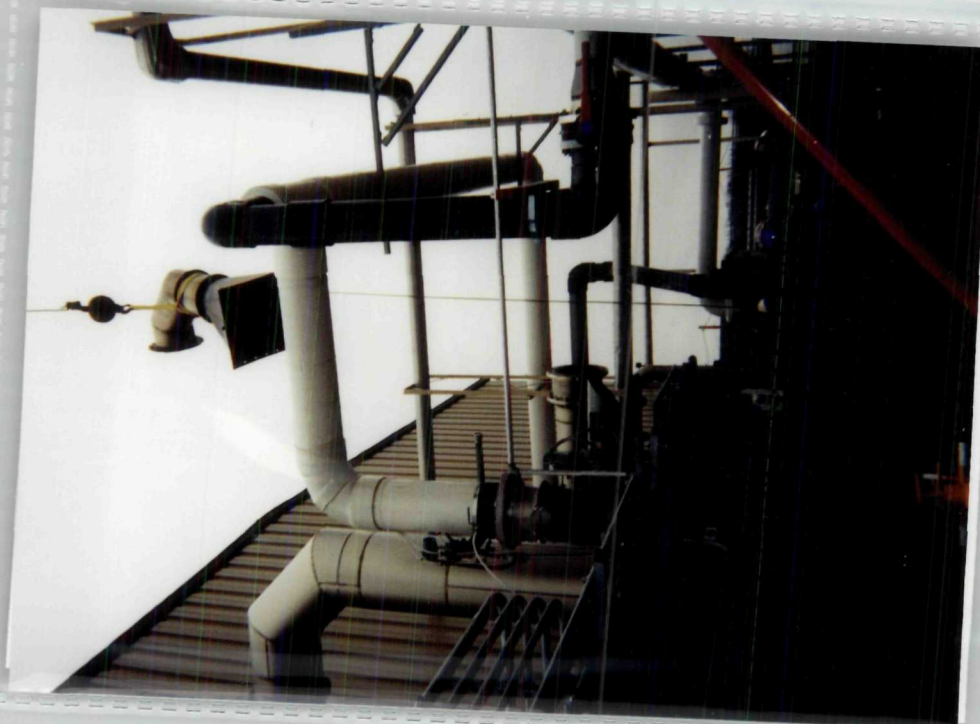
Proj. #: 46526

Roll: 53 Photo #13

Date: 03-01-04 Time: 09:03

Photographer: Leigh Peters

Description: Photo facing east showing Ryan Construction attaching the tag line to the Durr thermal oxidizer unit 1 ductwork.



Site: American Chemical Service, Inc.

Proj. #: 46526

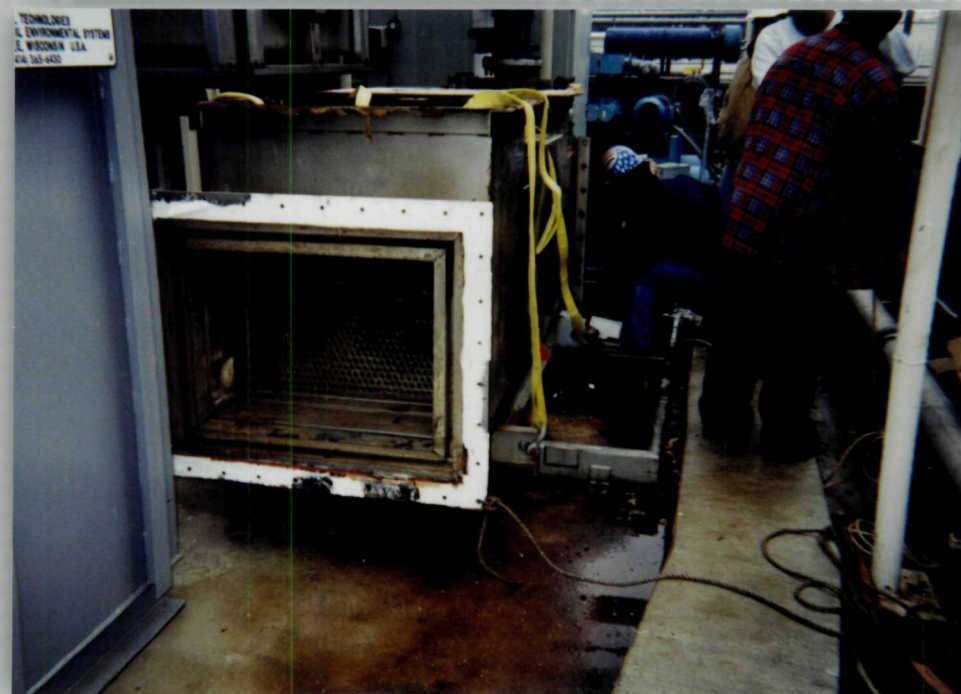
Roll: 53 Photo #14

Date: 03-01-04 Time: 09:05

Photographer: Leigh Peters

Description: Photo facing east showing the crane removing the ductwork connecting the Durr thermal oxidizer unit 1 oxidizer to the scrubber unit.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #15

Date: 03-01-04 Time: 09:23

Photographer: Leigh Peters

Description: Photo facing northeast showing Ryan Construction moving the Durr thermal oxidizer unit 1 heat exchanger.

Site: American Chemical Service, Inc.

Proj. #: 46526

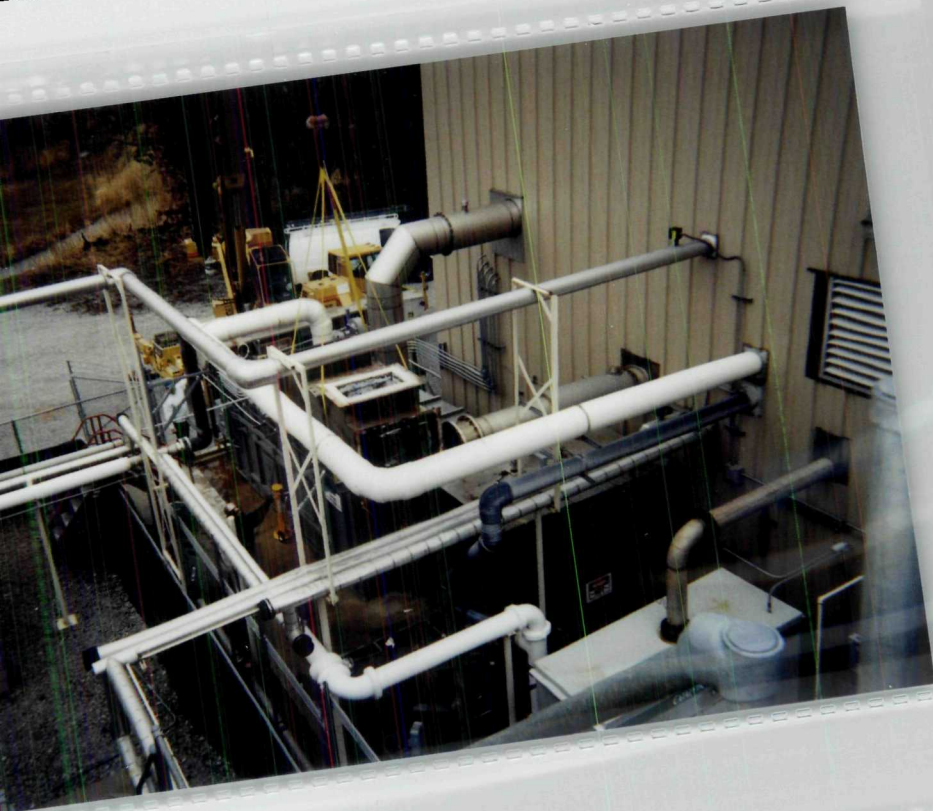
Roll: 53 Photo #16

Date: 03-01-04 Time: 09:30

Photographer: Leigh Peters

Description: Photo facing east showing Ryan Construction connecting the rigging and tag lines for the crane lift of the Durr thermal oxidizer unit 1 heat exchanger.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53

Date: 03-01-04

Photo #17

Time: 09:43

Photographer: Leigh Peters

Description: Photo facing northwest from the biotank showing the crane lift of the Durr thermal oxidizer unit 1 heat exchanger.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53

Date: 03-01-04

Photo #18

Time: 09:43

Photographer: Leigh Peters

Description: Photo facing northwest from the biotank showing Ryan Construction moving the Durr thermal oxidizer unit 1 heat exchanger.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #19

Date: 03-01-04 Time: 10:08

Photographer: Leigh Peters

Description: Photo facing north showing the interior of the oxidizer chamber and refractory for the Durr thermal oxidizer unit 1.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #20

Date: 03-01-04 Time: 10:15

Photographer: Leigh Peters

Description: Photo facing north showing the corrosion in the Durr thermal oxidizer unit 1 heat exchanger where the gas exits the oxidizer chamber.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #21

Date: 03-04-04 Time: 08:32

Photographer: Leigh Peters

Description: Photo looking west showing Global inspecting the damage to the Durr thermal oxidizer unit 1 heat exchanger.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #22

Date: 03-04-04 Time: 09:22

Photographer: Leigh Peters

Description: Photo facing south of IES monitoring the breathing zone with a photoionization detector.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #23

Date: 03-08-04 Time: 07:58

Photographer: Leigh Peters

Description: Photo facing east showing the temporary electric pump that is to be placed in the ONCA SBPA ISVE system wells for dewatering.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #24

Date: 03-08-04 Time: 10:05

Photographer: Leigh Peters

Description: Photo facing northwest showing the temporary electric pump and discharge hose.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #25

Date: 03-08-04 Time: 10:20

Photographer: Leigh Peters

Description: Photo facing southwest showing IES removing the pneumatic pump from ONCA SBPA ISVE system well SVE-50.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 53 Photo #26

Date: 03-08-04 Time: 10:27

Photographer: Leigh Peters

Description: Photo facing south showing IES inserting the discharge piping and flowmeter for connection to the pitless adapter in SVE-50.





Site: American Chemical Service, Inc.  
 Proj. #: 46526  
 Roll: 53 Photo #27  
 Date: 03-08-04 Time: 10:47  
 Photographer: Leigh Peters  
 Description: Photo facing northeast showing IES  
 inserting the temporary electric pump into  
 ONCA SBPA ISVE system well SVE-59.



Site: American Chemical Service, Inc.  
 Proj. #: 46526  
 Roll: 54 Photo #1  
 Date: 03-08-04 Time: 11:41  
 Photographer: Leigh Peters  
 Description: Photo facing east showing MWH purging  
 groundwater from ACS-GW-BS-01.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #2

Date: 03-08-04 Time: 12:02

Photographer: Leigh Peters

Description: Photo facing west showing MWH collecting a groundwater sample for VOC analysis at ACS-GW-BS-01.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #3

Date: 03-08-04 Time: 12:57

Photographer: Leigh Peters

Description: Photo facing north showing MWH filtering the groundwater sample at ACS-GW-BL-01 for dissolved metals analysis.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #4

Date: 03-08-04 Time: 13:49

Photographer: Leigh Peters

Description: Photo facing southwest showing MWH performing air monitoring during geoprobe activities at ACS-SS-BL-01.



Site: American Chemical Service, Inc.

Proj. #: 46526

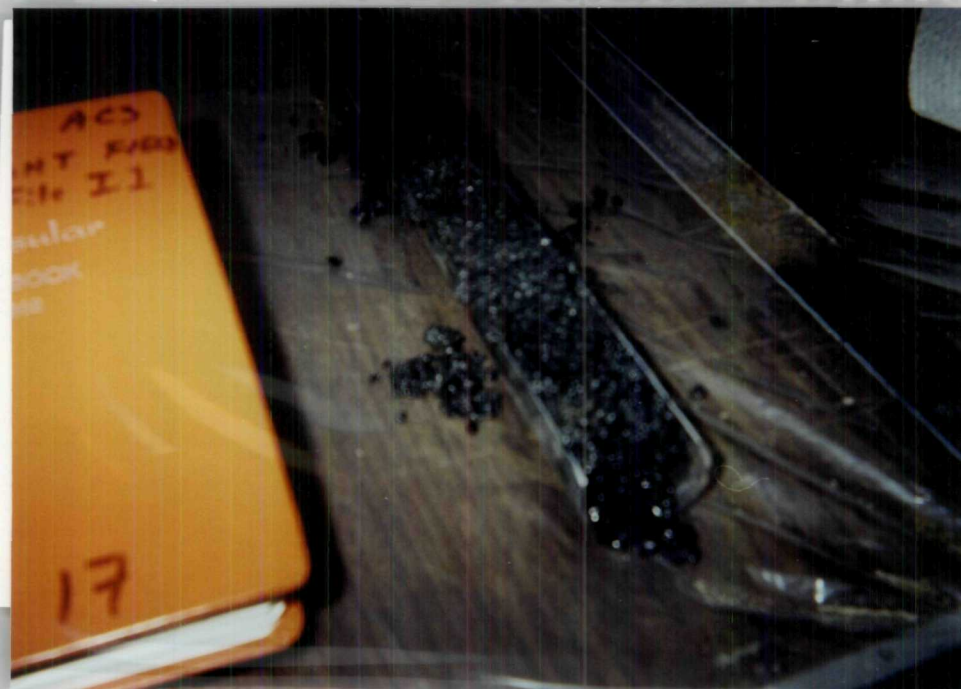
Roll: 54 Photo #5

Date: 03-08-04 Time: 14:48

Photographer: Leigh Peters

Description: Photo facing south showing the 15 feet to 20 feet interval and smear zone staining of soil sample ACS-SS-BS-02.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #6

Date: 03-08-04 Time: 14:50

Photographer: Leigh Peters

Description: Photo facing northeast showing a black stained gravel zone in sample from 15 feet to 20 feet at ACS-SS-BS-02.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #7

Date: 03-08-04 Time: 14:55

Photographer: Leigh Peters

Description: Photo facing east showing the smear zone from the 20 feet to 25 feet interval at ACS-SS-BS-02.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 54 Photo #8

Date: 03-08-04 Time: 15:02

Photographer: Leigh Peters

Description: Photo facing east showing the sample interval from 20 to 25 feet at ACS-SS-BS-02.



Site: American Chemical Service, Inc.

Proj. #: 46526

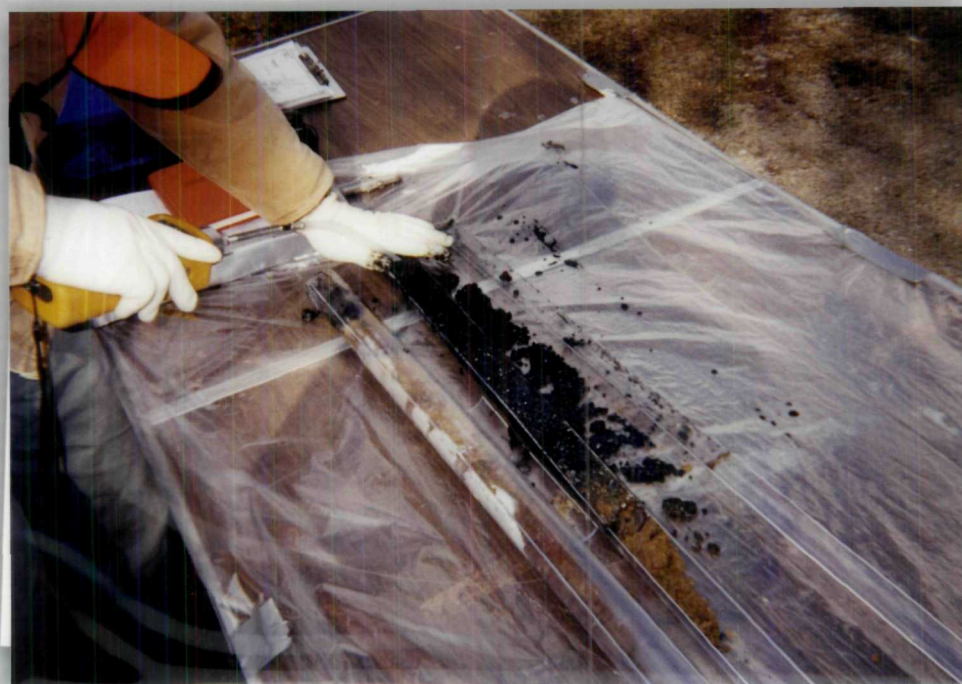
Roll: 54 Photo #9

Date: 03-08-04 Time: 15:48

Photographer: Leigh Peters

Description: Photo facing west showing MWH collecting groundwater samples from ACS-GW-BS-02 for analysis by ISOTEC.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #1

Date: 03-11-04 Time: 09:08

Photographer: Leigh Peters

Description: Photo facing northwest showing the staining observed at 19 feet bgs at ACS-SS-DL-04.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #2

Date: 03-11-04 Time: 09:11

Photographer: Leigh Peters

Description: Photo facing northwest showing MWH measuring VOCs of the soil sample from 20 feet to 25 feet bgs at ACS-SS-DL-04 with a PID.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #3

Date: 03-11-04 Time: 09:30

Photographer: Leigh Peters

Description: Photo showing MWH collecting a soil sample for VOC analysis from 20 feet bgs using an EnCore sampler at ACS-SS-DL-04.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #4

Date: 03-11-04 Time: 12:22

Photographer: Leigh Peters

Description: Photo facing north showing Chad Smith field filtering the groundwater sample from ACS-GW-DL-05 for dissolved metals analysis.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #5

Date: 03-11-04 Time: 12:30

Photographer: Leigh Peters

Description: Photo facing northeast showing the  
geoprobe screen used for groundwater  
sampling.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #6

Date: 03-11-04 Time: 13:00

Photographer: Leigh Peters

Description: Photo facing west showing the sample  
interval from 15 feet to 20 feet bgs at  
ACS-SS-DL-06.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #7

Date: 03-11-04 Time: 13:05

Photographer: Leigh Peters

Description: Photo facing west showing the sample interval from 20 feet to 25 feet bgs at ACS-SS-DL-06.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #8

Date: 03-11-04 Time: 13:40

Photographer: Leigh Peters

Description: Photo facing northeast showing the sample interval from 15 feet to 20 feet bgs at ACS-SS-DL-07.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #9

Date: 03-11-04 Time: 14:55

Photographer: Leigh Peters

Description: Photo facing southwest showing Matt Mesarch measuring the vapor flow through SVE-60.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #10

Date: 03-16-04 Time: 08:12

Photographer: Leigh Peters

Description: Photo facing north of MWH inserting the Grundfos pump into MW-11.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #11

Date: 03-16-04 Time: 08:20

Photographer: Leigh Peters

Description: Photo facing northeast at ground showing the initial purge water from MW-11. Note high turbidity and particulates.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #12

Date: 03-16-04 Time: 09:07

Photographer: Leigh Peters

Description: Photo facing north showing MWH collecting groundwater sample for VOC analysis at MW-11.





Site: American Chemical Service, Inc.  
 Proj. #: 46526

Roll: 55 Photo #13

Date: 03-16-04 Time: 09:50

Photographer: Leigh Peters

Description: Photo facing northwest showing the solids that were purged from the ONCA SBPA ISVE system yard piping connected to well SVE-86.

Site: American Chemical Service, Inc.  
 Proj. #: 46526

Roll: 55 Photo #14

Date: 03-16-04 Time: 10:30

Photographer: Leigh Peters

Description: Photo facing south showing MWH measuring the water level prior to purging at MW-23.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #15

Date: 03-16-04 Time: 11:02

Photographer: Leigh Peters

Description: Photo facing east showing MWH collecting and capping the VOC groundwater sample from MW-23.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #16

Date: 03-16-04 Time: 11:22

Photographer: Leigh Peters

Description: Photo facing southeast showing IES removing the temporary electric pump from ONCA SBPA ISVE system well SVE-72. Note oily black product on pump.





Site: American Chemical Service, Inc.  
 Proj. #: 46526

Roll: 55 Photo #17  
 Date: 03-19-04 Time: 08:00

Photographer: Leigh Peters

Description: Photo facing southwest showing MWH  
 connecting the Grundfos pump to the  
 dedicated tubing in MW-54R.



Site: American Chemical Service, Inc.  
 Proj. #: 46526

Roll: 55 Photo #18  
 Date: 03-19-04 Time: 08:50

Photographer: Leigh Peters

Description: Photo facing northwest showing MWH  
 collecting groundwater sample for VOC  
 analysis at MW-54R.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #19

Date: 03-19-04 Time: 09:26

Photographer: Leigh Peters

Description: Photo facing east showing MWH collecting water level prior to purging MW-39.

Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #20

Date: 03-19-04 Time: 11:18

Photographer: Leigh Peters

Description: Photo facing north showing MWH beginning to purge MW-15.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #21

Date: 03-19-04 Time: 11:27

Photographer: Leigh Peters

Description: Photo facing north showing MWH checking the flow rate and recording field parameters at MW-15.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #22

Date: 03-19-04 Time: 12:05

Photographer: Leigh Peters

Description: Photo facing north showing MWH collecting a groundwater sample for arsenic analysis from MW-15.





Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #23

Date: 03-19-04 Time: 14:30

Photographer: Leigh Peters

Description: Photo facing southwest showing MWH checking for air bubbles in the VOC sample from MW-28.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #24

Date: 03-19-04 Time: 14:40

Photographer: Leigh Peters

Description: Photo facing north showing MWH placing the Grundfos pump into MW-17.



Site: American Chemical Service, Inc.

Proj. #: 46526

Roll: 55 Photo #25

Date: 03-19-04 Time: 15:29

Photographer: Leigh Peters

Description: Photo facing southeast showing MWH  
collecting a groundwater sample for VOC  
analysis at MW-17.